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Larsen

January 1921

Test 082: Allis-Chalmers 12-20

Tractor Museum

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LINCOLN

Dates of test: Sept. 13 to Sept. 24, 1921.

Serial No. Engine: 10998 Serial No. Chassis 20134

Manufacturer: Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Tractor equipment used: Kingston (L) Carburetor; Dixie (46 c) magneto, own governor.

Style and dimensions of wheel lugs: Spade $2\frac{1}{2}$ x $2\frac{1}{2}$ x 3" high.

| H. P. | | Crank: Time | | Fuel Consumption | | Water Consump. | | Temp. in | | Average Humidity % | Height of Barometer Inches |
|-------|-------------|-------------|------|------------------|--------|----------------|---------|----------|---------|--------------------|----------------------------|
| Dev. | Shaft | of | Kind | Gals. | H. P. | Gals. Per Hour | Deg. F. | Deg. F. | Deg. F. | | |
| | Speed: Test | | of | @ | Hrs. @ | | | | | | |
| | R.P.M:Min. | | Fuel | Hour | Gal. | | | | | | |

27.28 : 1102 : 120 : Gaso. : 2.811 : 9.71 : 0.00 : .528 : .528 : 180 : 98 : 70 : 28.65
Belt slippage 1.19 %

| | | | | | | | | | | | |
|------------|---------|----|-------|---|---------------|------|------|---|------|---|--------------------------------|
| 27.29 | :1104 : | 10 | (Gas. | : | : | : | : | : | : | : | : |
| 26.56 | :1074 : | 10 | " | : | : | : | : | : | : | : | : |
| 1.27 | :1238 : | 10 | " | : | Belt Slippage | ,92% | : | : | : | : | : |
| 7.51 | :1209 : | 10 | " | : | : | : | : | : | : | : | : |
| 14.61 | :1177 : | 10 | " | : | : | : | : | : | : | : | : |
| 21.23 | :1140 : | 10 | " | : | : | : | : | : | : | : | : |
| Over 16.95 | :1158 : | : | : | : | 2.136 | : | 7.94 | : | .098 | : | .21 : .308:175 : 99: 68 :28.65 |

| | | | | | | | | | | |
|----------------|--------|---------|---------|--------|--------|--------|--------------|-----|------|-------|
| 33.18 : 1105 : | 60 : | Gaso, : | 3,857 : | 8.60 : | 0.00 : | .345 : | .345 : 181 : | 85: | 34 : | 28.70 |
| Belt Slippage | 1.59 % | | | | | | | | | |

14.64 : 1179 : 60 : Gaso. : 1.994 : 7.34 : 0.00 : .27 ; .27 : 173 : 99 : 56 : 28.60
Belt Slippage 1.87 %

*Taken in discharge line from engine.

Remarks: The fuel used in these tests weighed 6.17 pounds per gallon.

Copy of Report of Official Tractor Test No. 32

Drawbar Horse Power Tests

| E. P. | Draw | Speed | Crank | Slip | Fuel Consumption | | | Water | Temp. Deg. F. | | Average | Height |
|-------|------|-------|--------|--------|------------------|----------|------|---------|---------------|-------|----------|-----------|
| | | | | | Amt. | H.P. | used | | * | | | |
| Dev. | Bar | Miles | Shaft | Drive | Kind | Per Hrs. | per | Cooling | Air | Fluid | Humidity | of |
| | Pull | Per | Speed | Wheels | | Hour | Per | hour | | | % | Barometer |
| | Lbs. | Hour | R.P.M. | % | | Gal. | Gal. | gals. | | | | in inches |

Rated Load Test. Ten Hours

| | | | | | | | | | | | | |
|-------|------|------|------|---------|-------|-------|------|------|-----|----|----|-------|
| 15.13 | 1771 | 3.20 | 1094 | ***7.53 | Gasol | 2.601 | 5.82 | 0.23 | 168 | 91 | 45 | 28.65 |
|-------|------|------|------|---------|-------|-------|------|------|-----|----|----|-------|

Maximum Load Test

| | | | | | | | | | | | |
|-------|------|------|------|----------|-------|-----|-----------------|-----|----|----|-------|
| 21.42 | 2560 | 3.14 | 1114 | ***11.74 | Gasol | --- | Not Recorded--- | 150 | 75 | 45 | 28.75 |
| 20.40 | 3000 | 2.55 | 1297 | ***16.27 | Gasol | --- | Not Recorded--- | 150 | 75 | 45 | 28.75 |

*Taken in discharge line from engine.

** At surface of wheel rim.

*** At points of lugs.

Remarks: The rated load test and first maximum load test were run in high gear. The second maximum load test was run in low gear.

Oil Consumption: During the complete test consisting of about 41 hours running the following oil was used:
For the engine, $6\frac{1}{2}$ gallons of Sinclair Aero.
For the transmission, 1 gallon of Mobiloil C.

Copy of Report of Official Tractor Test No. 82.

Repairs & Adjustments:

During the limber-up run the gasoline feed pipe broke at tank connection. After rated, varying and half load brake tests and before maximum brake test:- carburetor was disassembled and cleaned; all valves were ground; magneto timing retarded, two new spark plugs installed and all spark plug points adjusted; cylinder blocks removed and top rings on pistons No. 1 and No. 2 found sticking in grooves due to too close fit.

During rated draw bar horse power test oil pipe broke at its connection on front of engine.

At the end of the test the tractor was apparently in good condition and there were no evidences of undue wear or weakness that might require early repairs.

Specifications: Allis-Chalmers 12-20.

Rating: Draw bar, 14 H. P.; Belt, 27 H. P.

Fuel: Gasoline.

Motor: Midwest, 4 cylinder, vertical, valve-in-head; bore, 4 1/8"; stroke, 5 1/4"; rated speed, 1100 r.p.m.

Chassis: 4 wheel, two speed and reverse sliding gear transmission. Expanding shoe clutch; rated speeds: high gear, 3.1 miles per hour; low gear, 2.3 miles per hour.

Total Weight: 4550 pounds.

General Remarks:

In the advertising literature and specifications submitted with the application for the test of this tractor, we find some statements and claims which cannot be directly compared with the results of the test as reported above. It is our opinion that none of these claims are excessive nor unreasonable.

We, the undersigned, certify that above is a true and correct report of official tractor test No. 82.

E. E. Brackett
Engineer-in-Charge

Oscar W. Sjogren

C. W. Smith

Fred R. Nohavec
Board of Tractor Test Engineers.